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THE OLD ENGLISH BALLADS.—ROBIN HOOD.—No. III

"A famous man was Robin Hood,
The English Ballad-singer's joy"—WORDSWORTH.

[Robin Hood and the Tanner.—Quarter-staff.]

ROBIN, king of Sherwood, was of a nature serious as well as humorous; if he matched the hypocrisy of the church with the cunning of the outlaw, and was in his element when serving up the "nombles of the deer, broiled pheasant, and Gascon wine" to a proud priest whose purse he designed to humble; for rougher men he had ruder weapons, and could strike with a steel-headed lance, wield a quarter-staff, or fight with a sword as well as he could draw the bow. We have seen him aiding, in his own way, an oppressed layman against the sordid abbot of St. Mary's; he is now to appear in another character, calling in the strong arm to aid the ready wit, and making friends where he at first found enemies. In the Tanner of Nottingham he had a spirit wholly to his liking, and the minstrel who framed the ballad seems to have felt it, for he sings in a better strain than common.

Indeed, Arthur-a-Bland, the Tanner, was a wild unsettled lad, and loved the hide better when rough and warm on the bull's back, than in his own tan-pit and in a fair way of becoming soles and uppers for boots and shoes. In his day there was no settled work for a tanner; husbandmen tanned the leather of their own shoes and horse-furniture in a way which science would scorn now, but tough withal and wearable, and this perhaps induced honest Arthur to think more of Barnesdale wood and his cousin Little John, than of toiling with raw hides in an unsavoury solution of oak-bark and ditch-water. In this unsettled state of mind, and with a reputation for a broil, he walked into the forest prepared alike for mischief or mirth, careless whether he met with a dun-deer or an armed outlaw. In colours suited to his character the old minstrel has sketched him:—

"In Nottingham there lives a jolly tanner,
His name is Arthur-a-Bland;
There's never a squire in Nottinghamshire
Dare bid bold Arthur stand.

With a long pike-staff on his shoulder,
So well he can clear his way;
By two and by three he makes them to flee,
For he hath no list to stay."

As he looked at the red-deer he chanced to meet Robin Hood, and, not knowing him, resolved to have some sport. "What makes you here so like a thief?" inquired the Tanner: "I am a keeper in this forest, and it is my duty to stay you." "Hast any assistants, man?" inquired Robin; "it is not one man that stops me." "Truly, friend," said the Tanner, "I have no better assistant than this good oak-graff, and it will do all I want."

"For thy sword and thy bow I care not a straw,
Nor all thine arrows to boot;
For an I get a knop at thy bare scap,
Thou canst as well spit as shoot.

Speak gently, good fellow, said Jolly Robin,
And give better terms to me,
Else I'll thee correct for thy neglect,
In not speaking mannerly."

"Marry, guep with a wanion," exclaimed the Tanner; "I regard not thy big looks." Robin on this unbuckled his belt, laid aside his sword and bow, and taking up a good quarter-staff of oak, said, "Let us measure staves, so that the play may be fair."

"I care not for length, bold Arthur replied,
My staff is of oak so free;
Eight foot and a half, it will knock down a calf,
And I hope it will knock down thee.

Then Robin Hood could no longer forbear,
But bestowed on him such a knock,
That quickly and soon the blood came down
Before it was ten o'clock."

The Tanner accepted no such favours without some return, and gave the Outlaw a blow that brought the blood trickling down every individual hair of his head. At the sight of his blood Robin's anger rose, and he struck lustily and well; but the Tanner laid on as if he were cleaving wood, and all Barnesdale rang with their blows. "Hold thy hand," cried Robin, thou hast done enough: I make thee free of the wood." "Why, Gad-a-mercy," answered the Tanner, "I may thank my staff, not thee, for that." "Well, well, good fellow," continued the Outlaw, "tell me, at any rate, thy name and trade."

"O, I am a tanner, bold Arthur replied,
In Nottingham long have I wrought;
An if thou'lt come there, I vow and swear
I will tan thy hide for nought.

Gad-a-mercy, good fellow, said Jolly Robin,
Since thou art so kind and free,
An if thou wilt tan my hide for nought,
I will do as much for thee."

During this pause in the strife they continued the conversation:—"I wish," said Robin, "that you would quit the tan-pits and live with me in the forest: as sure as my name is Robin Hood thou shalt not want gold and fee." "Ah," exclaimed Arthur-a-Bland, "if you are Robin Hood you can tell me where my kinsman Little John is; if I can find him we are not likely to part soon." A blast on the horn brought Arthur's relative, who was ready, as usual, to take up his master's quarrel.

"But Robin Hood took them both by the hands,
And danced round the oak tree,
'For three merry men, and three merry men,
And three merry men we be.'"

Robin's adventure with Sir Guy of Gisborne is tragical, as well as humorous: that good knight (if knight he were—for he is sometimes called plain Guy) seems to have had as much of the bully as the soldier in him, and to have been persuaded by the Sheriff of Nottingham to undertake a task in which abler men had failed. He certainly had all the external marks of valour; a swashing and a martial outside; and when he entered the forest arrayed in his "capul-hide," and his sword in his hand, he marched as if to an assured conquest, nor doubted that he should either take Robin Hood or slay him. But the ready wit and invention of the Outlaw were always near when bravery failed, and fortune seems to have delighted in affording him opportunities of showing the ascendancy of his mind over his hand. While Guy, in his capul-hide, made his way into the forest, Robin was fast asleep in a spot of much beauty.

"When shaws were sheen and shrads full fair,
And leaves both large and long,
It is merry to walk in the fair forest,
And hear the small bird's song.

The wood-weele sang and would not cease,
Sitting upon the spray,
So loud, he awakened Robin Hood
In the greenwood where he lay."

Up sprang Robin, and exclaimed, "I have had a dream: I dreamed that two strong yeomen overpowered me in fight, and beat me when they had bound me; if I meet two such I shall think of my dream." "Ah!" said Little John, to whom these words were addressed, "Those that mind freets, freets will follow, as Allan-a-Dale says." "I shall leave this place, nevertheless," said Robin; so they put on their green frocks, and, with their arrows at their backs, walked out among the deer.

"Until they came to the merry greenwood,
Where they had gladdest to be,
There they were aware of a wight yeoman,
That leaned him against a tree,

A sword and a dagger he wore by his side,
Of many a man the bane,
And he was clad in his capul-hide,
Top, and tail, and mane."

High words now ensued between Little John and his master, for both would take the adventure of Sir Guy and his capul-hide, and the former set off in a huff to join his comrades, who were posted in the neighbourhood of Nottingham, while Robin Hood walked up to the stranger, and thus accosted him: "Thou shouldst be a good archer, if I may judge by thy bow." "I have missed my way," said Sir Guy, not answering the question, "and have lost my morning's work." "Good fellow," replied Robin, "let me be thy guide in the forest."

"I seek an outlaw, the stranger said,
Men call him Robin Hood;
I'd rather meet him, that proud outlaw,
Than forty pound so good.

Now come with me, thou wight yeoman,
And Robin thou soon shalt see;
But first let us some pastime find
Under the greenwood tree."

On this they cut two long wands, and placing them threescore rods asunder, prepared their bows to shoot. It was evidently Robin's object to prove the skill of this venturous stranger, who had entered his dominions bow in hand, as if challenging him to a trial in the art in which he excelled. Had Guy been a more skilful archer, it is likely that Robin, instead of the "awkward stroke" which he bestowed on him, would have endeavoured to enlist him in his band.

"The first time Robin shot at the pricke,
He missed but an inch it fro;
The yeoman he was an archer good,
But he could never do so."

The second arrow of the stranger failed in its aim; that of Robin Hood cleft the wand.

"A blessing upon thy heart, he said,
Good fellow thy shooting is good;
For an thy heart be as good as thy hand,
Thou wert better than Robin Hood."

They were now approaching the debatable land. "Tell

me thy name, for there is much skill in thy right hand," said the stranger. "No, by my faith," said the outlaw, "not till I know what thine is."

"I dwell by dale and down, quoth he,
And Robin to take I'm sworn;
And when I am called by my right name,
I am Guy of good Gisborne.

My dwelling is in this wood, says Robin,
By thee I set right nought:
I am Robin Hood of Barnesdale,
Whom thou so long hast sought.

He that had neither been kith nor kin
Might have seen a full fair fight;
To see how together these yeomen went
With blades both brown and bright."

The combat was very fierce, for life or liberty was the prize they contended for. Robin stumbled on the root of a tree, and received a slight hurt in the side. "Ah, dear Lady," said he, addressing the Virgin, "let me not die before my time;" and on uttering this he felt strengthened, and leaping to his feet, struck his antagonist dead at a blow. He then cut Sir Guy's head off, gashed it so that no one might know whose it was, and stuck it on the end of his bow: then stripping the body, and taking off his own mantle of Lincoln green, exclaimed, in the savage pleasantry of those times, "If thou hast had the worst strokes at my hand, thou shalt have the better cloth."

"Then Robin did off his gown of green,
And on Sir Guy did throw;
And he put on that capul-hide
That clad him top to toe.

Thy bow, thy arrows, and little horn,
Now with me I will bear;
For I'll away to Barnesdale,
To see how my men do fare."

While Robin was on his way in search of his men, it will be necessary to say that Little John, in an accidental encounter with the Sheriff of Nottingham, had been taken prisoner, and, with Will Scarlett, whom he had tried to rescue, was on the road to be hanged. Robin Hood was aware of this, however, when he set Guy's horn to his mouth and blew a blast, for it was heard by the Sheriff and his men as they conducted Little John to the gallows.

"O hearken, hearken, the Sheriff he said,
I hear now tidings good;
For yonder I hear Sir Guy's horn blow,
And he hath slain Robin Hood.

Yonder I hear Sir Guy's horn blow,
It blows so well in tide;
And yonder he comes, that wight yeoman,
Clad in his capul-hide."

When the simulated Sir Guy came up, great was the rejoicing of the Sheriff, and liberal were his offers. "Ask what thou wilt," he cried, "and have it." "I will none of thy gold, good sir," said Robin, speaking hollow out of the capul-hide hood; "but since I have slain the master, let me bestow a blow on his knave, Little John. I ask no better recompense." "Thou art simply mad," answered the Sheriff: "thou hast done a feat worth a knight's fee; but since thou art pleased with little, why go and take it." When Little John heard his master's voice, he rejoiced and said, "Now I shall get loose, as sure as there are saints in heaven." His liberation was soon accomplished.

"For Robin pulled forth an Irish knife,
And loosed John hand and foot,
And gave him Sir Guy's bow in his hand,
And bade him arise and shoot.

Then John took Guy's bow into his hand,
His bolts and arrows each one:
When the Sheriff saw Little John bend the bow,
He ettled him to be gone."

The sight of those two terrible archers with their bows bent and their arrows in the string was enough for the Sheriff and his men: he fled towards Nottingham, but not so fast as to hinder Little John from despatching an arrow after him, which hindered him from sitting easily at dinner for some months after.

Robin Hood, in his dream, it will be remembered, imagined that he contended with two men who had commissions to slay him or take him prisoner. Of one of these he has already disposed; we must now look at his encounter with the other: this was the Tinker, in honour of whose interview with Robin there is a rather lively ballad. Now the tinker had not half the spunk of the tanner, whose pikestaff was ever ready to support his gibing insolence of tongue; neither had he all the martial boldness and swagger of the knight of the capul-hide, but was something of a skulking adventurer, who sought by stratagem, as well as by strength of hand, to capture the king of Sherwood. Such was the character of the tinker or gypsy then, and it is much the same still. These vagrants roam about—not, indeed, as they did a century ago, in bands of fifties and hundreds, the terror of the traveller and the villager—the law, with a peeled rod in its hand, is harder upon them than when it held a drawn sword—but in fives and sixes from hill to dale, and clout pans, mend kettles, repair china, rob hen-roosts, and tell fortunes. They are evidently of foreign descent: some of their women are remarkable for handsome figures and bright eyes. The "bugle eye-ball and the cheek of cream" recorded by Shakspeare may have belonged to a gypsy lass on the Avon, when he was a striker of the deer. To these wandering people some of our antiquaries conclude belonged the tinker, who took in hand the unfinished task of Sir Guy, and set out in quest of Robin, whom he found where he did not expect him—in the streets of Nottingham.

Now the king of the greenwood had an eye in his head, and seeing this stout stranger, desired to know his errand in a town where his own sway equalled at least that of the high sheriff. "Good morrow, friend," said Robin, "pray where live ye, and what is your trade? I hear there are sad news stirring." "Aye, indeed!" answered the other; "I am a tinker, and live at Banbury, and the news of which you speak have not reached me."

"As for the news, quoth Robin Hood,
It is but as I hear;
Two tinkers were set in the stocks
For drinking ale and beer.

If that be all, the tinker said,
As I may say to you,
Your tidings are not worth a groat
So be they were all true."

"Well," said Robin, "I love ale and beer, when they are good, with all my heart, and so the fault of thy brethren is small; but I have told all my news; now tell me thine."

"All the news I have, the tinker said,
And they are news for good;
It is to seek a bold outlaw,
Whom men call Robin Hood.

I have a warrant from the king
To take him where I can,
And if you can tell me where he dwells
I will make you a man."

"That I can readily do," replied the outlaw; "let me look at the warrant." "Nay, nay," said the tinker, "I'll trust that with no man." "Well," answered the other, "be it as you please; come with me, and I'll show you Robin Hood." To accomplish this, says the ballad, Robin took him to an inn where the ale and wine were so good and plentiful, and the tinker so thirsty, that he drank till he fell asleep, and when he awoke he found that the outlaw had not only left him the reckoning to pay, which was beyond his means, but had stolen the king's warrant. "Where is my friend?" exclaimed the tinker starting up. "Your friend?" said mine host; "why men call him Robin Hood, and he meant you evil when he met with

you." The tinker left his working-bag and hammer as a pledge for the reckoning, and, snatching up his crabtree staff, sallied out after Robin. "You will find him killing the king's deer, I'll be sworn," shouted the landlord; and accordingly among the deer he found him. "What knave art thou," said the outlaw, "that dares come so near the king of Sherwood?"

"No knave, no knave, the tinker said,
And that you soon shall know,
Which of us have done most wrong
My crab-tree staff shall show.

Then Robin drew his gallant blade
Made of the trusty steel,
But the tinker he laid on so fast
That he made Robin reel."

This raised the outlaw's wrath, and he exerted his skill and courage so well, that the tinker more than once thought of flight, but the man of Banbury was stubborn stuff, and at last drove Robin to ask a favour.

"A boon, a boon, Robin he cries,
If thou wilt grant it me.
Before I'll do't, the tinker said,
I'll hang thee on a tree.

But the tinker looking him about,
Robin his horn did blow;
Then unto him came Little John
And brave Will Scarlet too."

"Now what is the matter, master," said Little John, "that you sit thus by the way-side?" "You may ask the tinker there," replied Robin, "he hath paid me soundly." "I must have a bout with him then," said the other, "and see if he can do as much for me." "Hold, hold," cried Robin, "the tinker's a jovial fellow and a stout."

"In manhood he's a mettled man,
And a metal man by trade;
Never thought I that any man
Should have made me so afraid.

And if he will be one of us,
We will take all one fare,
Of gold and good, whate'er we get,
The tinker he shall share."

The tinker was not a man of many words; he nodded assent, and added another bold forester to the ranks of Robin Hood.

A. C.

The Arabian King and Poet.—A whimsical story is told of a king who denied to poets those rewards to which usage had almost given them a claim. This king, whose name is not recorded, had the faculty of retaining in his memory an ode after having only once heard it; and had a memlook who could repeat an ode which he had twice heard, and a female slave who could repeat one that she had heard thrice. Whenever a poet came to compliment him with a panegyrical ode, the king used to promise him that if he found his verses to be his original composition, he would give him a sum of money equal in weight to what they were written upon. The poet, consenting, would recite his ode; and the king would say, "It is not new; for I have known it some years;" and would repeat it as he had heard it; after which he would add, "And this memlook also retains it in his memory;" and would order the memlook to repeat it; which, having heard it twice, from the poet and the king, he would do. The king would then say to the poet, "I have also a female slave who can repeat it;" and ordering her to do so, stationed behind the curtains, she would repeat what she had thus thrice heard: so the poet would go away empty-handed. The famous poet El-Asma'ee, having heard of this proceeding, and guessing the trick, determined upon outwitting the king; and accordingly composed an ode made up of very difficult words; but this was not his only preparative measure; another will be presently explained; and a third was, to assume the dress of a Bedawee, that he might not be known, covering his face, the eyes only excepted, with a lithàm (a piece of drapery) in accordance with a custom of Arabs of the desert. Thus disguised, he went to the palace, and having asked permission, entered, and saluted the King, who said to him, "Whence art thou, O brother of the Arabs, and what dost thou desire?" The poet answered, "May God increase the power of the King! I am a poet of such a tribe, and have composed an ode in praise of our Lord the Sultán." "O brother of the Arabs," said the King, "hast thou heard of our condition?"—"No," answered the poet;" "and what is it, O King of the age?" —"It is," replied the King, "that if the ode be not thine, we give thee no reward; and if it be thine, we give thee the weight in money of what it is written upon."—"How," said El-Asma'ee, "should I assume to myself that which belongs to another, and knowing, too, that lying before kings is one of the basest of actions? But I agree to this condition, O our lord the Sultán." So he repeated his ode. The King, perplexed, and unable to remember any of it, made a sign to the memlook—but he had retained nothing; and called to the female slave, but she also was unable to repeat a word. "O brother of the Arabs," said he, "thou hast spoken truth, and the ode is thine without doubt: I have never heard it before: produce, therefore, what it is written upon, and we will give thee its weight in money, as we have promised."—"Wilt thou," said the poet, "send one of the attendants to carry it?"—"To carry what?" asked the King; "is it not upon a paper here in thy possession?"—"No, our lord the Sultán," replied the poet; "at the time I composed it I could not procure a piece of paper upon which to write it, and could find nothing but a fragment of a marble column left me by my father; so I engraved it upon this; and it lies in the court of the palace." He had brought it, wrapped up, on the back of a camel. The King, to fulfil his promise, was obliged to exhaust his treasury; and to prevent a repetition of this trick (of which he afterwards discovered El-Asma'ee to have been the author), in future rewarded the poets according to the usual custom of kings. —Mr. Lane's *Notes to his New Translation of the Arabian Nights.*

N... of Travellers by Stage-Coaches in Great Britain.—Upon making a calculation (by a method previously explained) for the whole number of stage-coaches that possessed licences at the end of the year 1834, it appears that the means of conveyance thus provided for travelling are equivalent to the conveyance, during the year, of one person for the distance 597,159,420 miles, or more than six times the distance between the earth and the sun. Observation has shown that the degree in which the public avail themselves of the accommodation thus provided is in the proportion of 9 to 15, or 3-5ths of its utmost extent. Following this proportion, the sum of all the travelling by stage-coaches in Great Britain may be represented by 358,295,652 miles. If we exclude from the calculation all very young children, as well as persons who from their great age and bodily infirmities are unable to travel, there will probably remain in England 10,000,000 of persons by whom that amount of travelling might be accomplished; but it is well known that a very large proportion of the population are not placed in circumstances that require them to travel, and, if even it were otherwise, that they would not avail themselves of a mode of conveyance so comparatively costly as a stage-coach. We shall probably go to the utmost extent in assuming that not more than 1-5th, or two millions of persons, travel in that manner, and it places in a strong point of view the activity which pervades this country when we thus arrive at the conclusion that each of those persons must on the average travel on land by some public conveyance 180 miles in the course of the year. This calculation is exclusive of all travelling in post-chaises, in private carriages, and by steam-vessels, the amount of which there are not any means for estimating. It affords a good measure of the relative importance of the metropolis to the remainder of the country, that of the above number of 597,159,420 the large proportion of 409,052,644 is the product of stage-coaches, which are licensed to run from London to various parts of the kingdom. The licences, which have formed the groundwork of the calculations, include all public conveyances proceeding between one part of England and another part of England, as well as those conveyances which travel between England and Scotland, but not such as begin and end their journeys in Scotland; and the travelling in Ireland is wholly excluded.—*Progress of Nation*, by G. R. Porter, vol. ii.

THE BADGER.

[The common Badger. *Meles Vulgaris.*]

No very minute investigation is needed to satisfy us that the progress of cultivation in any country must have considerable influence on the habits of the various tribes of its indigenous animals. Some in time come to be exterminated, and others exist in greatly diminished numbers. The climate of England is just as suitable to them, but it is now several centuries since the wolf, and more recently the wild cat, became extinct. Animals which are carnivorous and destructive to flocks and herds are hunted down, and those which can only find security in the recesses of vast woods fall easier and more frequent victims to their pursuers as the country becomes disafforested. Some are destroyed for the value of their skins, until the scarcity which ensues renders it necessary to resort to other countries for the supply. Thus war is made against animals which are perfectly harmless, as well as those which are really of destructive and noxious habits. In the course of time, the breed of animals whose existence is an object of anxiety to sportsmen and the lovers of the chace, can only be preserved in plantations, gorse covers, or other sheltered and protected places, in which they are carefully guarded from indiscriminate pursuit. On the other hand, various animals multiply and spread themselves over the country in proportion as its richness and abundance are increased by an extended and improving agriculture. It is from this cause that the pheasant, which was scarcely known in Scotland at one period, is now found as frequently as in many parts of South Britain. The badger would perhaps have been long since extinct in England but for the solitary life which it leads and its nocturnal habits. Its skin is of considerable value, and its flesh, at least the ham, is palatable, and resembles bear's flesh, for which a relish has always been affected or felt by sportsmen-epicures. In China, the badger may be seen in the meat-markets by dozens.

By Linnæus and the naturalists before his day, the badger was classed in the same genus as the bear. But the Linnæan arrangement has been broken down into sections and secondary groups in consequence of the discovery of many new species of animals within the last half-century. Comparative anatomy has been more generally and closely studied; and new and more scientific principles, deduced from this source, have been applied practically on a large scale by naturalists who have undertaken to investigate the general economy and habits of animals. The glutton, badger, and racoon, formerly placed with the bear genus, have been formed into distinct genera, this classification depending upon certain peculiarities of habit or structure. The badger, however, belongs, like the bear, to the class of plantigrade animals, the formation of the extremities compelling it to rest upon the whole sole of the foot in standing or walking; but while this peculiarity in the badger points out its connection with the same family as the bear, yet it is separated from the bear by its dental formation. The influence of this part of the formation of an animal is so important as generally to affect its habits and modes of life. If the teeth are capable of cutting and tearing flesh, it must be endowed with activity, energy, or cunning, to enable it to obtain animal food. The dental system in the badger is adapted for masticating vegetable substances, and when in confinement it shows a marked preference to this kind of food. In its natural state it lives chiefly upon roots, fruits, insects, and frogs; and it is likewise destructive of the eggs and young of pheasants, partridges, and other

birds which build their nests on the ground. Occasionally it attacks the nest of the wild bee, plundering the store of honey without dread of the sting of the bee, which cannot penetrate the thick skin of the badger, even if the long hair of the animal were not sufficient protection.

The badger is about the size of a middling dog, but its body being broader and flatter, and supported by short legs, it stands much lower than a dog. The external characteristics of the animal are—head long and pointed, ears almost concealed in the hair of the head, and the tail so short that it scarcely reaches to the middle of the hind legs; the hair trailing along the ground on each side as the animal moves; colour, a sandy grey; yellow towards the roots, bluish brown in the middle, and of a deeper yellow at the tips, which mixture of deep brown and pale yellow combined gives a grey appearance to the colour of the badger; and in many parts of the country it is called the "grey." Indeed it bears various names; one of them, the "brock," is its old Saxon name, which has therefore been applied to it for above a thousand years. The feet of the badger are furnished with powerful claws, and the legs being short and muscular, it naturally makes a subterranean habitation. When attempted to be dug out it proceeds from one point to another with so much activity, forming behind it a sort of outwork of earth, that it is difficult to be dug out. The formation of the feet also equally well fits it for obtaining roots as food. The badger prefers a sandy or light gravelly soil in which to make its burrow, which has one external entrance, leading into different chambers, and terminating in a circular one at the extremity. This latter is lined comfortably with dry grass and hay, and here the animal spends the live-long day in repose, moving out only at night in search of food. The badger leads the most solitary and quiet life, not being found in company even with the females of its own species. Sleeping all day long, rolled up on its bed of warm hay, appears to agree singularly well with it, as it is always fat. Though invariably choosing the most secret recesses of the woods for its abode, where, if anywhere, it could remain in peace, the badger is a scarce animal. The number of its young is from three to five annually at one birth. They are suckled for five or six weeks, and then taught to shift for themselves. Their numbers are kept down by various means; moonlight nights, and when they leave their burrows for food, affording the best opportunities of pursuing and destroying them. Though harmless, the badger, when attacked, shows great resolution and courage, and is no mean antagonist, grappling with a dog of twice its own weight; and from the manner in which the under-jaw is joined to the skull, keeping a firm hold with its teeth. The "sport" of badger-baiting was therefore one in which only the most brutal mind could find gratification. When the young are taken they may be easily tamed, and evince much docility and playfulness. No treatment, however kind, can change the character of the adult animal.

The skin of the badger is not without value in commerce. It makes excellent pistol-holsters, and the hair is used in painters' brushes, and as trimmings for articles of dress.

HOW TO MAKE A CHEAP VIOLIN.

WHEN we see violins of the old masters—Steiner Amati, or Stradivarius—which are called by the names of the makers in the same way as we speak of a Claude or a Titian, it is natural to inquire wherein consists the difference between those instruments and others of more modern date; the dimensions are the same—so is the form, and so is the general mode of arrangement, and yet the tones of the old instrument are eminently superior to those of modern construction. The most general opinion appears to have been that the wood of which the old violins were made has acquired a resonant or vibrating character by age, which newly-made instruments do not possess. The construction of the violin was never, however, taken up in a scientific point of view until a few years back, when M. Savart, a distinguished natural philosopher of France, investigated the sources of sound, as connected with the violin, in order to determine what were and what were not essential parts of the instrument.

One of M. Savart's first inquiries was, whether the curved undulating form of the surface of the violin is necessary to the beauty of the tones, and the manner in which he tested it was this: when fine dry sand is sprinkled on a vibrating surface, the sand is generally thrown into symmetrical forms, being collected in greater quantity at certain places where the vibration is not going on, and being thrown off those portions which are vibrating with most energy. Savart sprinkled some sand on the surface of a violin, and found that during the act of playing on the instrument much of the sand remained undisturbed, thereby showing that those parts failed to contribute to the sonorous effect. Both reasoning and experiment combined to produce an opinion that the curvature of the surface was a detriment rather than an advantage. He therefore began to construct his violin by providing flat surfaces or tablets, instead of curved; and in order that the surface on each side of the strings should have equal vibrating power, he made each tablet of two pieces, cut in parallel slices from the same plank, and glued together at their edges. As the strain is greatest under the strings, he made that part thicker than the edges, the latter being about one-twelfth and the former about one-fifth of an inch in thickness.

The next part to which he directed his attention was the bridge; and in order to discover what purpose it served besides supporting the strings, he made the following experiment: along a thick plank he stretched a musical cord, fastened at the two extremities, and elevated from the plank by a bridge, as in the violin. The bridge rested on two little feet, as in the ordinary construction, and was separated from the plank by a circular disc or plate of lead. On this plate sand was sprinkled, and the string was then played by the bow as usual, when the sand immediately formed itself into a symmetrical figure on the leaden plate. This showed that the vibrating motion which the bow gave to the string was communicated to the bridge, and, by means of the two little feet, to the leaden plate on which the bridge rested; and analogy showed to Savart that it must be mainly by means of the bridge that the body of the violin is set into a vibratory state when the strings are vibrating.

The question now arises, in what way is the vibration of the upper surface or face of the instrument communicated to the under surface or back? All violin-players know that a little wooden peg or post which is placed within the body of a violin has an important influence on the tone; this peg is called the *sounding-post*, or, as the French term it, the *soul* of the violin; and it has been frequently supposed to act merely as a support to the upper surface. Savart found, however, that it acts as a communicator of vibrations. If we place one end of a poker on the lid of a vessel containing boiling water, and the other end between the teeth or close to the ear, we shall hear the sound of the boiling with great distinctness, in consequence of its being conveyed through the solid iron more readily than through air: the sounding-post acts an analogous part by conveying to the lower surface of the violin the vibrations which have been excited in the upper. This being the case, it is important to choose the best place for the sounding-post, because some parts of the surface do not vibrate so powerfully as others, and therefore would not convey a vibratory action to the lower surface so readily as other parts, if the post were fixed at the former. We shall return to this presently.

In the violins which M. Savart examined, he found a bar, called the *bar of harmony*, running down the inside of the upper surface from end to end, and acting as a strengthener or support to it. This bar did not run down the middle immediately under the strings, but a little on one side, under the left foot of the bridge; while the sounding-post was under the right foot. Now this rigid bar gives an unequal elasticity to the two halves of the upper surface, as it loads that half to which it is attached with a weight from which the other half is exempt; and as Savart wished to equalize the elasticity as much as possible, he placed his bar down the middle or thickest part of the upper tablet.

No doubt many a young violinist has wondered what is the use of the two crooked holes in the surface of the instrument, and whether there is any particular virtue in an italic *S*, that that form should be chosen for the holes. Savart found that when he pasted thin paper over these holes, the sound of the instrument was much enfeebled, and he therefore concluded that they act the same part as the hole in the side of a large drum, that is, establish a communication between the air which is vibrating within the instrument and the external air; still he could see no reason why they should be fancifully curved, especially when it is obvious that a greater number of fibres must be cut through than if the holes were straight and in the direction of the grain. He therefore cut the holes or openings according to the latter plan.

It is known that a violin will yield some tones more easily and more brilliantly than others; and Savart conjectured that this might be due either to the curved form of the surface, by which some of it was non-vibrating, or to the position of the sounding-post, by which it was situated at a nodal or quiescent point during some tones; for we may here remark, that sand sprinkled on a vibrating body assumes different figures during the production of different tones. As the air-holes or openings were free to vibrate with much facility in Savart's violin, he placed the sounding-post very near one of them, so that it should be the means of communicating energetic vibrations from the upper to the under tablet.

The next circumstance to which M. Savart directed his attention was the shape of the body of the instrument. This, we know, is curved in a complicated manner, for besides the general bending round the whole instrument, there are two deep hollows cut, one on each side. It appears that these hollows enable the player to draw his bow across the highest and lowest, or the two extreme strings, without touching the others; and if no injury resulted to the tone, all this would be well. But M. Savart thought that the sides of the violin were rendered almost incapable of vibrating by this complex curvature; for the bending which the wood experiences before it can assume the required form gives it very unequal elasticity in different parts; he therefore resolved to do away with these curvatures altogether, and he made his violin with straight sides, the length being about equal to that of ordinary violins, and the width being greater near the end than near the handle or neck. By this construction the instrument was deprived of the facility for playing the exterior strings, which the side-hollows usually afford; but Savart obviated this inconvenience by making the bridge higher than usual, so that the bow could act upon the G and E strings without touching the edge of the violin.

By the straight form which he thus gave to the sides of the instrument, he insured the cooperation of the sides in the general vibration of the whole instrument, and thus increased the sonorous effect. In order to make this still more effective, he increased the depth of the body, so that the sides should present a larger vibrating surface, and at the same time that a larger mass of air should be set in vibration in the interior; for it is plain that if the face and back of the violin vibrate, the included air must vibrate also. In this manner, then, did M. Savart investigate the different circumstances which combine to produce the tones of a violin; and when he had experimentally determined these several points, he constructed, with his own hands, a violin such as we have been describing. What was the success of his experiment, we will now show.

It is customary in France, when a new discovery or a new invention is announced, for the Academy of Sciences to issue a commission, appointing certain of its members, who are conversant with the subject, to make a careful investigation into the merits of the invention or discovery, and to report on it to the Academy;—a practice which is attended with this advantage,—that an humble but ingenious man stands a chance of having his labours appreciated. M. Savart presented a memoir on the subject of his violin to the Academy, who appointed a commission to investigate and report upon it. This commission consisted of four men of science, MM. Biot, Prony, Haüy, and Charles, and four members of the Academy of the Fine Arts, MM. Cherubini, Catel, Berton, and Le Seur. M. Biot, the distinguished philosopher, drew up the report, and as his account of the trial of the instrument is very interesting, we will translate his own words, as given in the 'Annales de Chimie et de Physique.'

The question was, how would M. Savart's instrument, constructed by his own hands, stand the test of comparison with a good old violin.

"To assure themselves of this," says M. Biot, "the commission invited M. Lefebvre, chief of the orchestra of the Théâtre Feydeau, to make a trial of it before them. This able artist, whose performance on the violin—full of grace and sensibility—has been long known and appreciated by the world, yielded to our desire with much courtesy: he was willing to compare the violin of Savart with that which he was in the habit of playing, and which is so full of expression in his hands. He played the one and the other in succession before us; and the new violin was found to possess a greater purity of tone, and a more perfect equality in the different tones; the last of which qualities is know to be very rare. The new violin, heard from a short distance, appeared to have somewhat less brilliancy than the other; but this difference decreased at a greater distance. The better to assure ourselves of the comparison, we requested M. Lefebvre to retire to an adjoining room, and to play the same passages alternately on the two instruments, without telling us which he was about to play; when they were found so nearly equal, that the most practised persons confounded one with the other; or if there were any difference, it was that the new violin had a little more sweetness of tone."

Here then we see that a man of science—without mechanical experience—was able to make a violin which stood the severe test of comparison with an old one of long celebrity, and in the hands, too, of a first-rate player. There certainly appears no reason why a common mechanic should not be able to produce a violin of equal, or nearly equal, excellence. It does not seem necessary that the handle or neck, or the disposition of the pegs, &c., should be different from usual: but the particulars in which M. Savart's violin differed from those of ordinary construction are those which we have mentioned, and which we may sum up together as follows:—1. Instead of having the face and back of the body curved, he formed them of flat surfaces, each surface being made of two pieces similar in size and direction of grain; one-fifth of an inch thick at one edge, and one-twelfth of an inch at the other, united by their thick edges. 2. The sides were made perfectly straight, instead of being hollowed out. 3. The bridge was made a little higher than usual, to suit the altered shape of the body. 4. The strengthening bar, or bar of harmony, was placed under

the middle of the instrument, instead of at one side of the middle. 5. The holes in the upper surface were straight, instead of being curved like an *f*. 6. The sounding-post was placed very near one of these holes. 7. The sides of the instrument were deeper than in ordinary violins, so that its internal capacity was greater. Eight years ago, Sir John Herschel "longed to see M. Savart's construction tried in this country;" and we heartily join in the wish.

VACCINATION IN CHINA.

The introduction by foreigners of anything new among a people so riveted to antient customs as the Chinese are, has often been pronounced impossible; but this, like many other pretended impossibilities, has been more than once overcome: the Chinese, in fact, like other people, are not averse to adopt what they think likely to benefit them, although the remoteness or obscurity of a proffered benefit, or the fears of a suspicious government, have often kept out improvement. The discovery of Jenner, which has saved so many lives in Europe, was introduced into China many years ago, and to the credit of the Chinese be it said, that although brought by a few strangers with whom their intercourse was not the most friendly, and although it was opposed by their priests and doctors, whose interests concurred in repulsing any innovation which might lessen the profits of attending the sick or propitiating evil spirits, it was received in that country with far less jealousy than in any nation of Europe, notwithstanding our claims to superior freedom from prejudice.

The date of the introduction of vaccination into China is 1805. In the spring of that year, Mr. Hewet, a subject of Portugal, and merchant of Macao, making a voyage from Manilla to that place, brought with him on board his own vessel several persons inoculated with the cowpock by the medical gentleman under whose care the vaccine matter had been carried from the Spanish colonies in South America to the Philippine Islands. The smallpox in the southern provinces of China is an annual visitant; great numbers of the poorest classes in these provinces live together in the smallest practicable space, either crowded in their little huts on shore, or in their boats on the river, which in very many cases are the only abodes of large classes: amongst these poor people, whose habits are none of the cleanest, the disease regularly makes its appearance in the month of February, carries off great numbers of children, and disappears in the early part of June, soon after the coming on of the great heats. Here was a fine opportunity of testing the efficacy of the new discovery, and of convincing the natives of its value. The Chinese showed no disposition to shun the trial; Dr. Pearson, a resident in the country, had in some measure prepared the way, by a pamphlet detailing the benefit to be derived from the practice, which was translated into Chinese by Sir George Staunton and widely circulated; the Portuguese at Macao also had spread it in that island as extensively as their opportunities reached. A certain degree of confidence was thus raised among the people of the continent before the practice actually reached them. This event took place early in 1806, at the period of the removal of the British Factory to Canton, when Dr. Pearson was prepared to vaccinate all applicants; great numbers of children were brought, thousands were vaccinated within the year, either by Dr. Pearson himself, or by Chinese instructed and provided with the vaccine matter by him, and the event fully answered the expectations of those who tried the new discovery. The failures were very few; and although the native practitioners were necessarily inexperienced, no complaints were made.

In a very few years the smallpox ceased to be epidemic in the part of China contiguous to Canton, and the evil and remedy were both forgotten. The natives, who were so desirous of anticipating the disease when the danger was imminent, now ceased to think of it; they seemed to suppose that the malady was wholly eradicated, and Dr. Pearson, who knew better, had very great difficulty in getting a sufficient number of patients to preserve the lymph. At four different times he did actually lose it, and it is an interesting fact that at two of these epochs he obtained it again from considerable distances in the interior, to which it had been carried by native practitioners, who had continued to vaccinate persons in places where the attacks of smallpox still continued to be feared. On the two other occasions, it had to be brought from the Philippine Islands, at the same cost and with the same care as at its first introduction.

Vaccination is gradually diffusing itself through that part of China which is in direct communication with Europeans, but up to the present moment it has scarcely extended much beyond that limit; and this would seem to arise not so much from prejudice and dislike to innovation, as from the difficulty of keeping up a proper supply of efficient matter, and of properly conducting the necessary operation and inspection when not under the eye of a competent European, nor within a distance admitting of reference to such an individual in case of failure. At one period it reached so far as Pekin, and it evinced in that city its preservative effects so extensively as to induce much confidence in its power; but unfortunately the supply of matter was not kept up during the healthy season, and in the following year none was procurable.

The progress of vaccination in China was in a contrary direction to that which took place in Europe. The lower classes first adopted it, and very extensively; from them it reached the middle classes, amongst whom it is now very general, and more recently the higher ranks have frequently had recourse to it, though the comparatively little exposure of their children to contagion makes it less imperative upon them to adopt it. Once or twice it has been checked by reports of its inefficiency, and some well-authenticated cases of smallpox after vaccination were alleged against it. These cases were investigated by the Chinese themselves: it was ascertained that such cases had occurred, but at the same time it was proved that they were of a very modified nature; that instead of the mortal epidemic which had so often thinned the poorer population, the malady after vaccination was slight, like the chicken-pox, with which the Chinese were well acquainted. The result of the investigation was a generally increased confidence in the efficacy of vaccination.

The Chinese now engaged in vaccinating are mostly such as have been employed about the East India Company's factory at Canton, their medical men having invariably discountenanced the practice, as not accordant with the ancient rules of art, from which they dare not depart, and perhaps also as interfering with their emoluments. Many of the vaccinators are intelligent men, who have proved themselves to be able and careful practitioners, and several have found in the duty they have undertaken a source of reputation and profit. The principal Hong merchants at Canton have instituted a fund for affording gratuitous inoculation to the poor, and out of it they have apportioned small premiums to be given to such as bring their children at times considered unlucky or improper for taking any remedy. This judicious step may have a good effect in rooting up superstition among a people much of whose religion consists in the observance of lucky and unlucky days.

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